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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/039,190 | 12/31/2001 | Sompong Paul Olarig | 069099.0105 | 7164 |
| 23640 | 7590 | 11/03/2005 | EXAMINER | |
| BAKER BOTTS, LLP 910 LOUISIANA HOUSTON, TX 77002-4995 | | | HAMANN, JORDAN J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2667 | |

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/039,190 | | OLARIG ET AL. | |
| | Examiner | | Art Unit | |
| | Jordan Hamann | | 2667 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,15,16,21,22,27,29&30 is/are rejected.
- 7) ☒ Claim(s) 2,5-14,17-20,23-26,28,31-33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>8/17/05 & 9/27/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed 31 December 2001 fails to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

The information disclosure statement filed 17 August 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
It does not identify the citizenship of each inventor.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 430, 0, 1, 2, 3, 19, 36 and 510. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because Figures 7-10 are unreadable. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes

made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: page 12 paragraph 24 reference character 109 appears to have meant to have been reference character 409, the end of page three and beginning of page 4 do not match, on page 9 the phrase "for example but be limited to" does not make sense, and on page 2 the application serial numbers are missing.

Appropriate correction is required.

Claim 20 is objected to because of the following informalities: it is dependent on itself. Appropriate correction is required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by

Lebizay et al. (US 5,602,841).

With respect to claim 1, Lebizay discloses a network system comprising:

- a plurality of network processor interfaces for transmitting and receiving data cell sequences,
- a switch fabric interface (Figure 1 Elements 403, 404, and 410);
- an ingress path providing a plurality of ingress queues between the plurality of network processor interfaces and the switch fabric interface combining the transmitted data calls of the network processors to a single data cell sequence (Figure 14 Element 141);
- an egress path providing a plurality of egress queues (Figure 14 Element 143) and a memory controller between the plurality of the switch fabric interface and network processor interfaces for distributing data cell sequences from a received data cell sequence to the respective network processor interfaces (Figure 14 Element 146).

With respect to claim 3, Lebizay discloses the system according to claim 1, wherein each network processor interface comprises a receiving interface and a transmitting interface (Figure 4 Elements 407, 413 and 415).

Claims 1, 3, 4, 21, 22, 29 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Epps et al. (US 6,731,644).

With respect to claim 1, Epps discloses a network system comprising:

- a plurality of network processor interfaces for transmitting and receiving data cell sequences,
- a switch fabric interface (Figure 1 Element 170);
- an ingress path providing a plurality of ingress queues between the plurality of network processor interfaces and the switch fabric interface combining the transmitted data calls of the network processors to a single data cell sequence (Figure 2 Element 215);
- an egress path providing a plurality of egress queues (Figure 2 Element 1430) and a memory controller between the plurality of the switch fabric interface and network processor interfaces for distributing data cell sequences from a received data cell sequence to the respective network processor interfaces (Figure 1 Element 150).

With respect to claim 3, Epps discloses the system according to claim 1, wherein each network processor interface comprises a receiving interface and a transmitting interface (Figure 2 Element 210).

With respect to claim 4, Epps discloses the system according to claim 3, wherein the ingress queues each have an input and an output, each ingress queue input being coupled with a respective transmitting network processor interface, and the ingress path

further comprises a multiplexer coupled with the outputs of the plurality of ingress queues and the switch fabric interface (Figure 3 Element 470).

With respect to claim 21, Epps discloses a method of controlling the ingress and egress data paths of a network processor interface system, said method comprising the steps of:

- providing a plurality of network processor interfaces for transmitting and receiving data cell sequences;
- providing a switch fabric interface(Figure 1 Element 170);
- providing an ingress path having a plurality of ingress queues between the plurality of network processor interfaces and the switch fabric interface combining the transmitted data calls of the network processors to a single data cell sequence(Figure 2 Element 215); and

- providing an egress path having a plurality of egress queues (Figure 2 Element 1430) and a memory controller between the plurality of the switch fabric interface and network processor interfaces for distributing data cell sequences from a received data cell sequence to the respective network processor interfaces (Figure 1 Element 150).

With respect to claim 22, Epps discloses the method according to claim 21, further comprising the steps of:

- buffering transmitted data cells in the ingress queues,
- combining the content of the ingress queues, and
- buffering the combined data cells in an ingress output queue (Figure 4 Element 470 and 240).

With respect to claim 29, Epps discloses the method according to claim 21, further comprising the step of:

- distributing data cells according to a priority scheme included in the data cells (column 1 lines 27-30).

With respect to claim 30, Epps discloses the method according to claim 21, further comprising;

- distributing data cells according to a Quality of Service scheme included in the data cells (column 1 lines 27-30).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15, 16 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epps et al. (US 6,731,644) in view of Drummond-Murray et al. (6,762,995).

With respect to claim 15, Epps discloses the system according to claim 1, see 102 rejection above, however does not disclose wherein each queue comprises an associated watermark register.

Drummond-Murray discloses a network switch wherein each queue has associated watermarks (Figure 6 and described in column 7 lines 1-6).

Epps and Drummond-Murray are analogous art because they are from the same field of endeavor of switching packets/cells.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the watermarks of Drummond-Murray on the queues of Epps.

The motivation for doing so would have been to denote when a queue is full and stop adding packets or cells to the queue until it is below a level and can again accept a multiplicity of packets or cells (column 3 lines 54-65).

Therefore, it would have been obvious to combine Drummond-Murray with Epps to obtain the invention as specified in claim 15.

With respect to claim 16, Epps in view of Drummond-Murray discloses the system according to claim 15. Epps further discloses a control unit for controlling the ingress and egress queues (Figure 12 Element 1210 and Figure 15 Element 1510).

With respect to claim 27, Epps discloses the method according to claim 21, see 102 rejection above, however does not disclose further comprising the steps of monitoring the filling levels of the queues, and generating control signals according to the filling level.

Drummond-Murray discloses a network switch wherein each queue has associated watermarks (Figure 6 and described in column 7 lines 1-6).

Epps and Drummond-Murray are analogous art because they are from the same field of endeavor of switching packets/cells.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the watermarks of Drummond-Murray on the queues of Epps.

The motivation for doing so would have been to denote when a queue is full and stop adding packets or cells to the queue until it is below a level and can again accept a multiplicity of packets or cells (column 3 lines 54-65).

Therefore, it would have been obvious to combine Drummond-Murray with Epps to obtain the invention as specified in claim 27.

Allowable Subject Matter

Claims 2, 5-14, 17-20, 23-26, 28 and 31-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Simpson discloses cell queue formation in an ATM switch.

O'Grady discloses a method and apparatus for reordering packet data units in storage queues for reading and writing memory.


Wilford discloses a linecard architecture for high speed routing of data in a communications device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jordan Hamann whose telephone number is (571) 272-8564. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JJH


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2667 08/31/05